LArSoft - Necessary Maintenance #19494

Restore fuzzyCluster to a reasonable memory usage

03/26/2018 12:26 PM - Gianluca Petrillo

Status:	Accepted	**Start date:**	03/26/2018
Priority:	Normal	**Due date:**	
Assignee:		**% Done:**	0%
Category:	Library	**Estimated time:**	0.00 hour
Target version:		**Spent time:**	0.00 hour
Experiment:	-		

Description

About four years ago, Gianluca tackled the excessive usage of memory of the at the time popular fuzzyCluster algorithm.
Changes were performed at different levels, one of which was a custom allocator for the std::map data that the Hough transform algorithm implemented by fuzzyCluster author used.
Unfortunately, that custom allocator (lardata:source:lardata/Utilitles/BulkAllocator.h) uses knowledge of GNU C++ STL internals which are not present in Clang STL implementation.

The special allocator is being disabled to allow an expedite support for Clang. This ticket is about the restoration of the full functionality or about an alternative action.
Possible solutions are:

1. correct the implementation of BulkAllocator
2. replace BulkAllocator with a STL allocator from memory_resources, maybe %{font-family: monospace} monotonic_buffer_resource" (C++17 standard, available in both GCC 6.4 and Clang 5.0 only as experimental/memory_resources)
3. drop the optimisation
4. redesign the algorithm
5. drop the algorithm

I believe that the original author, Ben Carls, has left the field. Also, I am not aware of running and developing experiment using it, but ArgoNeuT might be.

Associated revisions

Revision 16d97b76 - 03/28/2018 03:56 PM - Gianluca Petrillo

BulkAllocator feature removed as in issue #19494

Revision 114e782c - 04/02/2018 04:50 PM - Gianluca Petrillo

BulkAllocator feature removed as in issue #19494

History

#1 - 03/29/2018 01:16 PM - Tingjun Yang

ArgoNeuT is not using fuzzycluster.

#2 - 04/02/2018 10:19 AM - Lynn Garren

- Status changed from New to Accepted